CUSE

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CUSE Newsletter

A semiannual newsletter of Regional Centre for Manufacturing Systems Engineering, Chulalongkorn University
(Chula Systems Engineering - CUSE)

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Message from the Director

CUSE is going from strength to strength as we enter 2023, the Year of the Rabbit.

From the first cohort of students in January 1996, CUSE is now entering our 27th year of operation, serving business and industry region-wide with always-in-demand engineering management graduates. Our past graduates have contributed so much to the advancement of technological and industrial knowledge in both the service business and manufacturing industry in the region.

In recent years, we have witnessed a shift in focus from manufacturing to a broader world view of supply chain and logistics management, service management design and innovation, as well as healthcare service systems. This wider view is not only revealed in the vast repertoire of our thesis research titles but also reflected in similar developments in this part of the world.

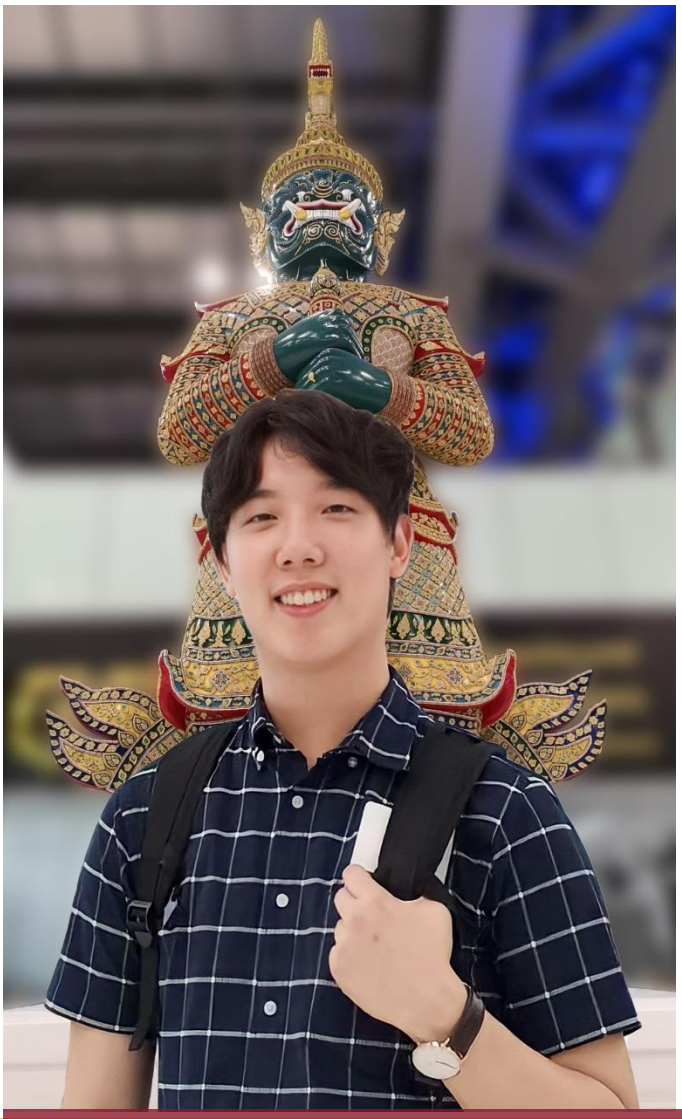
In this remarkable year, our student quality is well-proven in the Warwick Manufacturing group's Departmental Prize 2022 awarded to CUSE's Stanley Yip, detailed in other articles in this issue. In what has virtually become CUSE tradition, a sizable number of our students continue to graduate with the award of distinction.

This year should see more varieties of applicants to our dual master's degree programme in terms of academic background, student nationality, and degree level. We would encourage more applications from qualified senior undergraduate engineering students in particular, starting with those from Chulalongkorn University's International School of Engineering. Those interested may contact CUSE office for more information.

All in all, we wish everyone in the CUSE community a happy and exciting year ahead!

Chuvej Chansa-ngavej
(Associate Professor Chuvej Chansa-ngavej, PhD)
CUSE Director

In conversation with Stanley Hung Fai Yip



Why do you apply for the dual degree at WMG? (CUSE)

I began to apply for this programme because I truly believe that it could provide me with essential knowledge in overall business management, as well as necessary skills that allow me to become a proper managerial leader.

What are the benefits of our program from both academic and practical perspectives?

This programme is structured differently from the traditionally taught degree programmes that separate the whole academic year into a set of semesters, with a number of courses that are densely packed within. With the modular system, students are free to choose and complete the courses that well suit their time.

I also find that the modules themselves, and all post-module assignments, are specifically designed to simulate real business operations. This, in turn, helps equip me with not only knowledge but also research and critical thinking skills that are crucial for real businesses.

Lastly, and more importantly, the dissertation allows me to integrate concepts and theories from all courses into actual company practice, which helps shape me into a higher level of problem solvers/decision makers.

What are your impressions regarding our programme?

The thesis advisor and committees in the CUSE are professional and helpful in addressing issues in the dissertation. They also give proper suggestions and advice so that I can improve the project. Without their help, I would not be able to receive the prestigious "WMG Departmental Prize 2022".

Please give us comments related to the program, learning environment, working opportunity, thesis advisor, or anything that you want to say.

I appreciate the schedule for each module by CUSE that well gives me time for both working and studying. As an international student in the CUSE, I enjoy studying with the local students as they are enthusiastic and friendly.

Research Corner

by Asst.Prof. Pisit Jarumaneeroj, the Secretary of CUSE

Since the emergence of the Coronavirus Disease 2019 (COVID-19) in December 2019, COVID-19 has become a major health threat that affects the whole world. In order to keep the pandemic under control, a wide range of non-pharmaceutical mitigation strategies, such as lockdown and work-from-home measures, have been accordingly imposed. Although such measures have proven themselves useful in fighting against the COVID-19 outbreak, as they help reduce the number of daily contacts – and so risks of infection – they adversely affect mobility of people and their respective transport behavior.

Particularly, people are more concerned in taking crowded public transportation, leading to a shift of transportation modes towards private individual ones. While safer, this new transportation pattern, however, deteriorates not only the efficacy of public transportation systems but also their long-term sustainability – which might be worse off after the end of COVID-19 outbreak, where the pre-pandemic level of transportation activities resumes.

To better address this issue, many have explored the development of more private but yet sustainable modes of transportation that meet the ever-changing mobility behavior of people; and, bicycle sharing is among the alternative modes of green transportation that has been highlighted worldwide. Notwithstanding the benefits of bicycle sharing, it has been successfully adopted by urban residents of European countries, the United States, and China – mainly because of their sufficiently good bicycling infrastructure and legislation. Besides these countries, bicycling is merely a means of leisure activities, despite attempts made by many local authorities to develop more efficient bicycle-sharing systems in complement with their current transportation networks.

In order to comprehend the current state of bicycle sharing in Thailand, as well as the impacts of COVID-19 on such a system, Assoc.Prof. Pisit Jarumaneeroj has conducted research, whose results are summarized in an academic paper entitled "Impacts of the COVID-19 pandemic on the spatio-temporal characteristics of a bicycle-sharing system: A case study of Pun Pun, Bangkok, Thailand", in PLOS ONE. Those who are interested in this paper may download the full paper via the following link without charges. https://doi.org/10.1371/journal.pone.0272537.

Impacts of the COVID-19 pandemic on the spatio-temporal characteristics of a bicycle-sharing system: A case study of Pun Pun, Bangkok, Thailand

The COVID-19 pandemic is found to be one of the external stimuli that greatly affects mobility of people, leading to a shift of transportation modes towards private individual ones. To properly explain the change in people's transport behavior, especially in pre- and post- pandemic periods, a tensor-based framework is herein proposed and applied to Pun Pun – the only public bicycle-sharing system in Bangkok, Thailand – where multidimensional trip data of Pun Pun are decomposed into four different modes related to their spatial and temporal dimensions by a non-negative Tucker decomposition approach. According to our computational results, the first pandemic wave has a sizable influence not only on Pun Pun but also on other modes of transportation. Nonetheless, Pun Pun is relatively more resilient, as it recovers more quickly than other public transportation modes. In terms of trip patterns, we find that, prior to the pandemic, trips made during weekdays are dominated by business trips with two peak periods (morning and evening peaks), while those made during weekends are more related to leisure activities as they involve stations nearby a public park. However, after the first pandemic wave ends, the patterns of weekday trips have been drastically changed, as the number of business trips sharply drops, while that of educational trips connecting metro/subway stations with a major educational institute in the region significantly rises. These findings may be regarded as a reflection of the ever-changing transport behavior of people seeking a sustainable mode of private transport, with a more positive outlook on the use of bicycle-sharing system in Bangkok, Thailand.

Commencement Ceremony

From November 10th to 11th, 2022, Chulalongkorn University has held a commencement ceremony for students graduating in the 2021 Academic Year. In this academic year, the CUSE had 6 graduates and we would like to congratulate them on their success.

CU Ranking

Chulalongkorn University has been ranked as the top university in Thailand and No.5 in ASEAN by the Quacquarelli Symonds (QS) Sustainability 2023, released on October 26, 2022. Of the 700 participating universities from 71 countries around the world, Chulalongkorn University made No.13 in Asia and placed in the world's top 151-160 tier in this sustainability ranking scheme.
This is the first edition of the QS World University Rankings in Sustainability 2023, which focuses on environmental sustainability performance in higher education institutions, released by the Quacquarelli Symonds (QS).

Find out more about the QS World University Rankings at https://www.topuniversities.com/university-rankings/sustainability-rankings/2023
Source: https://www.chula.ac.th/en/news/89807/

In the latest results for the 2022 Academic Ranking of World Universities, Chulalongkorn University was ranked Thailand's top university in academic performance by ShanghaiRanking Consultancy. Chulalongkorn University additionally made the list for

- Top 5 in ASEAN
- Top 100 in the world for Veterinary Sciences
- Top 100 in the world for Dentistry & Oral

The Academic Ranking of World Universities (ARWU) is published and copyrighted by Shanghai Ranking Consultancy, which is a fully independent organization on higher education intelligence and not legally subordinated to any university or government agencies.
The criteria for 2022 Academic Ranking of World Universities included the number of alumni and staff winning Nobel Prizes and Fields Medals (30%),
the number of highly cited researchers selected by Clarivate (20%), the number of articles published in journals of Nature and Science (20%), the number of articles indexed in Science Citation Index Expanded and Social Sciences Citation Index in the Web of Science (20%), and per capita performance of a university (10%).
(For more information, visit https://www.shanghairanking.com/methodology/arwu/2022.)
Source:https://www.chula.ac.th/en/news/89774/

CUSE Student Awarded

WMG Departmental Prize for 2022

CUSE's Stanley Hung Fai Yip has been awarded the prestigious "WMG Departmental Prize 2022" because of his excellent marks in both coursework and thesis research project.

The WMG Departmental Prize, the first to be awarded to CUSE students, was awarded by Warwick Manufacturing Group based on the decision by WMG's MSc Examination Board. The prize was announced at the WMG Graduation Celebration event in January 2023.

Stanley Yip studies in CUSE's dual master's degree programme of MSc in Supply Chain & Logistics Management, University of Warwick and MEng in Engineering Management, Chulalongkorn University. Along with his Warwick's MSc degree, he simultaneously receives his Master of Engineering degree from Chulalongkorn University with an excellent 3.95 GPA.

Stanley Yip's master's degree thesis, under the advisory of Professor Parames Chutima and Associate Professor Chuvej Chansa-ngavej, is entitled "Subcontractor Selection for Mega Construction Project under Supply Chain Management". The thesis is based on his work experiences with a major construction company in Hong Kong, where he was originally from.

Stanley Hung Fai Yip received his BSc Hons in Surveying from Hong Kong Polytechnic University in 2019. He now works in the United Kingdom.

CUSE at a Glance

Total number of current students and their home countries

No	Country	Male	Female	No
1	Thailand	18	16	34
2	Bangladesh	1	-	1
3	Nepal	1	-	1
4	Switzerland	1	-	1
5	Colombia	1	-	1
6	Philippines	1	-	1
7	China	1	-	1
8	Myanmar	1	-	1
			Total	41

Numbers of students awarded with merit and distinction in 2022

2022	Distinctions	Merit	Percentage of students graduating in 3 years*
Total	2	4	100%

* 17% of the students graduated in less than 2 years.

Numbers of newly enrolled students

Academic Year	Number of newly enrolled students
2017	4
2018	11
2019	8
2020	17
2021	12
2022	9
2023*	8

* Incomplete academic year

Motto

Those who could think would thrive over those who could do.
Engineers, though, had better strive for both, i.e. Think - and do - as well.

Professor Phra Charoen Wisawakam
Longest-serving Dean of Engineering, Chulalongkorn University
(from 11 June 1929 to 18 June 1961)